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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,011	03/03/2004	Cheng Guo	AM-5264.D1	4270
7590	07/07/2004		EXAMINER	
Patent Counsel Applied Materials, Inc. P.O. Box 450-A Santa Clara, CA 95052			MOHAMEDULLA, SALEHA R	
		ART UNIT	PAPER NUMBER	
			1756	

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/792,011	GUO ET AL.
	Examiner Saleha R. Mohamedulla	Art Unit 1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 03 March 2004.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 24 and 47-60 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 24 and 47-60 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 03 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)               |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4604</u> . | 6) <input type="checkbox"/> Other: _____ .  |

## **DETAILED ACTION**

Claims 24 and 47-60 are pending.

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 60a. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The disclosure is objected to because of the following informalities: The first sentence of the specification cites a related case, but no U.S. Serial No. is given. In addition, the specification should be amended to cite updated continuing data.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 24, 53, and 55-57 are rejected under 35 U.S.C. 102(b) as being anticipated by US# 4,827,138 to Randall.

Claim 24 is a product-by-process claim, and is only limited by the structural features recited and not the method of making the structure. Claim 53 recites a process limitation but is a product claim. The claim does not require that filling material exists.

Randall teaches the final structure of the mask. Randall teaches a grid-like mask. Figure 3 shows square shapes that are preferred in the construction of the mask (col. 5, lines 5-10). The mask forms a screen that contains a multiplicity of openings. The openings extend through the entire thickness of the screen from the top surface to the bottom surface (col. 6, lines 3-18). Filler material is added within the openings of the screen. The specific material used as the filler material is not critical to the operation of the mask (col. 6, lines 39-42). The filler material need not entirely fill the openings (col. 6, lines 65-68). The filler material may be spun on or may be applied using chemical vapor deposition. Regardless of the application technique, the filler material is applied over the entire surface of the screen. At this point, the screen and filler form a mask blank (col. 7, lines 5-15). Figure 6 shows the removal of the filler material from selected portions of the screen to form a programmed mask. A resist material may serve as the filler.

With this type of filler, a programmed mask may be produced by exposing a particular pattern on a mask blank using (see Figure 5) electron beam lithography. Randall teaches that the techniques for exposing such a pattern are conventional. The filler is then removed from selected portions of the mask blank by development (col. 7, lines 25-40). Because the filler was exposed to electron beam lithography in a pattern, a mask was formed over the filled screen. Because Randall teaches all the openings in the screen are initially filled, Randall teaches the limitations of claim 22.

5. Claim 24, 53, and 55-57 are rejected under 35 U.S.C. 102(b) as being anticipated by US# 6,168,890 to Takahashi.

Claim 24 is a product-by-process claim, and is only limited by the structural features recited and not the method of making the structure. Takahashi teaches the final structure of the mask. Claim 53 recites a process limitation but is a product claim. The claim does not require that filling material exists. Takahashi teaches a mask layer and a grid structure with windows (col. 4, lines 25-60). See figures 1 and 5.

6. Claim 24 and 47-60 are rejected under 35 U.S.C. 102(b) as being anticipated by US# 5,899,728 to Mangat et al.

Claim 24 is a product-by-process claim, and is only limited by the structural features recited and not the method of making the structure. Mangat teaches the final structure of the mask. Claim 53 recites a process limitation but is a product claim. The claim does not require

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that filling material exists. Mangat teaches a mask layer and a grid structure with windows. See figures 2 and 3.

Mangat teaches a stencil mask having a grid structure with a plurality of windows where the outer struts are thicker than the inner struts. The inner struts do not exhibit a width that interferes with radiation transmission (col. 4, line 20 – col. 6, line 45).

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Saleha Mohamedulla whose telephone number is (571) 272-1387. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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June 18, 2004